

All  
R<sup>6</sup>: a lower alkyl, -OH, -O-lower alkyl, -O-aryl which may have substituent(s), -O-lower  
alkylene-aryl which may have substituent(s), -NR<sup>1</sup>-aryl which may have substituent(s), -CO-  
lower alkyl, or -aryl group which may have substituent(s); and

R<sup>7</sup>: the same or different, H or the same group as R<sup>6</sup>.

### REMARKS

Entry and consideration of this Amendment is respectfully requested. Support for the  
amendments are as follows:

- (1) The support for the changes from "3,4-(CH)<sub>4</sub>" at page 35  
and Tables to "3,4-(CH=CH-CH=CH)" is as follows. Please  
note that all changes in the Tables related to "3,4-(CH)<sub>4</sub>".

At page 35, lines 17-19, it is described that "a compound  
in which R<sup>2</sup> is 3,4-(CH)<sub>4</sub> represents a 2-naphthyl group  
together with the adjacent benzene ring", which means that  
the description about "3,4-(CH)<sub>4</sub>" means a naphthyl group.  
In order to further clarify that the definition means a  
naphthyl group, please change "3,4-(CH)<sub>4</sub>" to "3,4-(CH=CH-  
CH=CH)". The compounds amended in this regard has  
3,4-(CH=CH-CH=CH) as R<sup>2</sup>.

- (2) The support for the addition of "-OCH<sub>2</sub>O-, or -(CH=CH-  
CH=CH)-" in Claim 1 and page 6, lines 23-24 is as follows.

The following compounds wherein R<sup>2</sup> is 2,3-OCH<sub>2</sub>O or  
3,4-OCH<sub>2</sub>O are described.

Page 38, Table 3: Compound 34 and 35

Page 38, Table 4: Compound 70 and 71

Page 40, Table 6: Compound 154 and 155

Page 40, Table 7: Compound 190 and 191

Page 42, Table 9: Compound 274 and 275

Page 42, Table 10: Compound 310 and 311

The following compounds wherein  $R^2$  is 3,4-(CH=CH-CH=CH) (i.e., 3,4-(CH)<sub>4</sub>" before amendments) are described.

Page 38, Table 3: Compound 36

Page 38, Table 4: Compound 72

Page 40, Table 6: Compound 156

Page 40, Table 7: Compound 192

Page 42, Table 9: Compound 276

Accordingly, addition of "-OCH<sub>2</sub>O-, or -(CH=CH-CH=CH)-" is sufficiently supported by these descriptions.

- (3) The support for the addition of " $R^2$  also represents -OCH<sub>2</sub>O- or -(CH=CH-CH=CH)-, wherein -OCH<sub>2</sub>O- means a methylenedioxy group and -(CH=CH-CH=CH)- means a naphthyl group together with the adjacent benzene ring." into page 11 is as follows.

It is described at page 35, lines 17-20 that "a compound in which  $R^2$  is 3,4-(CH=CH-CH=CH) represents a 2-naphthyl group together with the adjacent benzene ring, and OCH<sub>2</sub>O represents methylenedioxoy group."

- (4) The support for the addition of "The substituent  $R^2$  on the anilino group in the formula (I) represents one or a plural number of groups (e.g., "3,5-Me" means "3,5-dimethyl")." into page 11 is as follows.

The following compounds are described.

Page 37, Table 2: Examples 7, 10, 14

Page 38, Table 3: Compound 31, 32, 33

Page 38, Table 4: Compound 68, 69

Page 40, Table 6: Compound 151, 152, 153

Page 40, Table 7: Compound 188, 189

Page 42, Table 9: Compound 271, 272, 273

Page 42, Table 10: Compound 307, 308, 309

In these compounds, R<sup>2</sup> is 3,5-Me, 3,5-MeO, 3,5-Cl, 3,5-Br, or 3,5-F. In this regard, it is explained at page 35, lines 4-7 that "the number before ... For example, 3,5-Me indicates 3,5-dimethyl". Based on the Examples and this description, it is originally disclosed that R<sup>2</sup> means one or a plural number of groups.

Respectfully submitted,

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Date: December 10, 2001

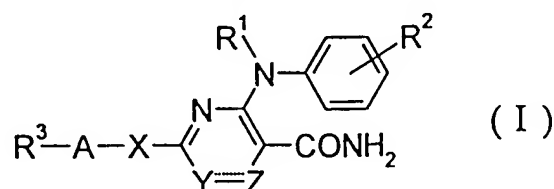
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APPENDIXVERSION WITH MARKINGS TO SHOW CHANGES MADEIN THE SPECIFICATION:

The specification is changed as follows:

Page 6, first full paragraph

Namely, the invention relates to a novel heterocyclecarboxamide derivative represented by the following general formula (I) or a pharmaceutically acceptable salt thereof, and a medicament comprising the same as the active ingredient.



(wherein the symbols in the formula have the following meanings.

A: a lower alkylene which may have substituent(s), an arylene which may have substituent(s), a heteroarylene which may have substituent(s), a cycloalkylene which may have substituent(s), or H;

X: NR<sup>4</sup>, CONR<sup>4</sup>, NR<sup>4</sup>CO, O, or S;

a dotted line between Y and Z: presence (Y=Z) or absence (Y-Z) of a bond;

Y-Z: N(R<sup>5</sup>)-C(O), C(O)-N(R<sup>5</sup>), N(R<sup>5</sup>)-N(R<sup>5</sup>), or C(O)-C(O);

Y=Z: N=C(R<sup>6</sup>), C(R<sup>7</sup>)=N, N=N, or C(R<sup>7</sup>)=C(R<sup>7</sup>);

R<sup>1</sup>, R<sup>4</sup>: H, a lower alkyl, -CO-lower alkyl, or -SO<sub>2</sub>-lower alkyl;

R<sup>2</sup>: H, a lower alkyl, a halogen, a lower alkyl substituted by halogen(s), -O-lower alkyl, -S-lower alkyl, -O-aryl, -O-lower alkylene-aryl, -S-lower alkylene-aryl, nitro, ~~or cyano, group~~ -OCH<sub>2</sub>O-, or -(CH=CH-CH=CH)-;

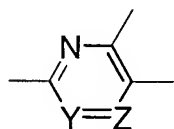
$R^3$ :  $-\text{CO}_2\text{H}$ ,  $-\text{CO}_2$ -lower alkyl, -lower alkylene- $\text{CO}_2\text{H}$ , -lower alkylene- $\text{CO}_2$ -lower alkyl, - $\text{CONHOH}$ ,  $-\text{CONHO}$ -lower alkyl, -lower alkylene- $\text{CONHOH}$ , -lower alkylene- $\text{CONHO}$ -lower alkyl,  $-\text{NH}_2$ ,  $-(\text{NH}_2 \text{ in a prodrug form})$ , -lower alkylene- $\text{NH}_2$ , or -lower alkylene- $(\text{NH}_2 \text{ in a prodrug form})$ ;

$R^5$ : H or a lower alkyl group;

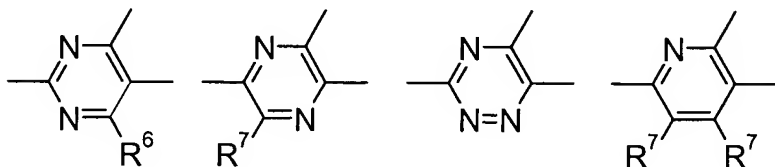
$R^6$ : a lower alkyl,  $-\text{OH}$ ,  $-\text{O}$ -lower alkyl,  $-\text{O}$ -aryl which may have substituent(s),  $-\text{O}$ -lower alkylene-aryl which may have substituent(s),  $-\text{NR}^1$ -aryl which may have substituent(s),  $-\text{CO}$ -lower alkyl, or -aryl group which may have substituent(s);

$R^7$ : the same or different, H or the same group as  $R^6$ . The same shall apply to the following).

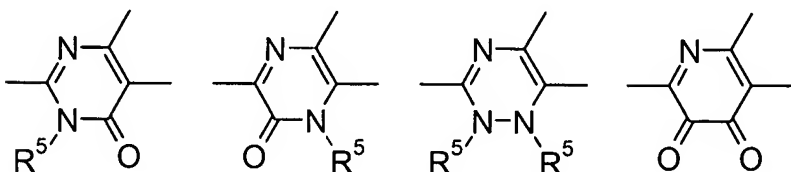
By the way, when  $\text{Y}=\text{Z}$  represents  $\text{N}=\text{C}(\text{R}^6)$ ,  $\text{C}(\text{R}^7)=\text{N}$ ,  $\text{N}=\text{N}$ , or  $\text{C}(\text{R}^7)=\text{C}(\text{R}^7)$  in the formula, the central heterocycle part:



represents any of the following formulae:



and when  $\text{Y}-\text{Z}$  represents  $\text{N}(\text{R}^5)-\text{C}(\text{O})$ ,  $\text{C}(\text{O})-\text{N}(\text{R}^5)$ ,  $\text{N}(\text{R}^5)-\text{N}(\text{R}^5)$ , or  $\text{C}(\text{O})-\text{C}(\text{O})$  in the formula, the central heterocycle part represents any of the following formulae.



**Page 23, first full paragraph**

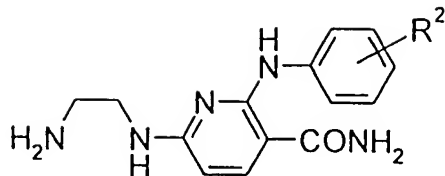
A peptide of 18 amino acid residues (MEELQDDYEDMMEENLEQ) (Sequence No.: +EQ ID NO:1) containing Tyr-8 of human erythrocyte Band 3 (Harrison, M. L. et al., J. Biol. Chem., 269: 955-959 (1994)) was synthesized using a peptide synthesizer. Using a biotinylation kit manufactured by Pierce, the N-terminal of the peptide in a resin-linked state was biotinylated, and purification was carried out using an HPLC.

**Page 35, second full paragraph**

Rex: Reference Example number, Ex: Example number, Cmpd: compound number, Ph: phenyl, Me: methyl, Et: ethyl, tBu: tert-butyl, Boc: tBuO-CO-, Bn: benzyl, Ac: acetyl, BCA: cis-2-(tert-butoxycarbonylamino)cyclohexylamino, PEA: (1'S,1R,2S)-2-(1'-phenylethylamino)cyclohexylamino, CCA: cis-2-aminocyclohexylamino, ACA: (1R,2S)-2-aminocyclohexylamino. Sal: salt (blank space: free form; HCl: hydrochloride), Dat: physicochemical data (F: FAB-MS (M+H)<sup>+</sup>; FN: FAB-MS (M-H)<sup>-</sup>; M: melting point (°C); A: specific rotation [ $\alpha$ ]<sub>D</sub> (MeOH)). Also, a compound in which R<sup>2</sup> is 3,4-(CH)<sub>4</sub>=CH-CH=CH). represents a 2-naphthyl group together with the adjacent benzene ring, and OCH<sub>2</sub>O represents methylenedioxy group.

## Page 38, Table 3

Table 3

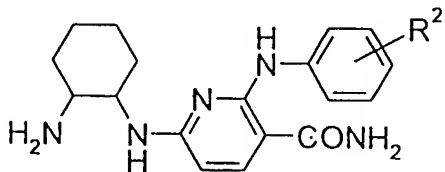


Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>
1	2-Br	10	2-H <sub>2</sub> N	19	2-PhO	28	2-Bu
2	3-Br	11	3-H <sub>2</sub> N	20	3-PhO	29	3-Bu
3	4-Br	12	4-H <sub>2</sub> N	21	4-PhO	30	4-Bu
4	2-Cl	13	2-Ac	22	2-MeO	31	3,5-Cl
5	3-Cl	14	3-Ac	23	3-MeO	32	3,5-MeO
6	4-Cl	15	4-Ac	24	4-MeO	33	3,5-Me
7	2-HOCH <sub>2</sub>	16	2-MeS	25	2-Me	34	2,3-OCH <sub>2</sub> O
8	3-HOCH <sub>2</sub>	17	3-MeS	26	3-Me	35	3,4-OCH <sub>2</sub> O
9	4-HOCH <sub>2</sub>	18	4-MeS	27	4-Me	36	3,4-(CH) <sub>4</sub>

3,4-(CH=CH-CH=CH)

## Page 38, Table 4

Table 4

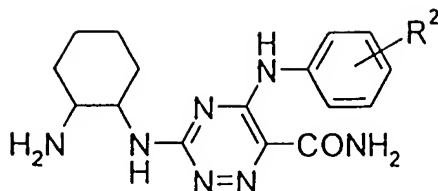


Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>
37	2-Br	46	2-H <sub>2</sub> N	55	2-PhO	64	3-Et
38	3-Br	47	3-H <sub>2</sub> N	56	3-PhO	65	4-Et
39	4-Br	48	4-H <sub>2</sub> N	57	4-PhO	66	3-Pr
40	2-Cl	49	2-Ac	58	2-MeO	67	3-Bu
41	3-Cl	50	3-Ac	59	3-MeO	68	3,5-Cl
42	4-Cl	51	4-Ac	60	4-MeO	69	3,5-MeO
43	2-HOCH <sub>2</sub>	52	2-MeS	61	2-Me	70	2,3-OCH <sub>2</sub> O
44	3-HOCH <sub>2</sub>	53	3-MeS	62	4-Me	71	3,4-OCH <sub>2</sub> O
45	4-HOCH <sub>2</sub>	54	4-MeS	63	2-Et	72	3,4-(CH) <sub>4</sub>

3,4-(CH=CH-CH=CH)

## Page 40, Table 6

Table 6

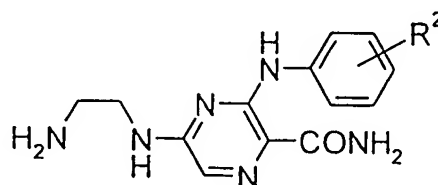


Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>
121	2-Br	130	2-H <sub>2</sub> N	139	2-PhO	148	2-Et
122	3-Br	131	3-H <sub>2</sub> N	140	3-PhO	149	3-Et
123	4-Br	132	4-H <sub>2</sub> N	141	4-PhO	150	4-Et
124	2-Cl	133	2-Ac	142	2-MeO	151	3,5-Cl
125	3-Cl	134	3-Ac	143	3-MeO	152	3,5-MeO
126	4-Cl	135	4-Ac	144	4-MeO	153	3,5-Me
127	2-HOCH <sub>2</sub>	136	2-MeS	145	2-Me	154	2,3-OCH <sub>2</sub> O
128	3-HOCH <sub>2</sub>	137	3-MeS	146	3-Me	155	3,4-OCH <sub>2</sub> O
129	4-HOCH <sub>2</sub>	138	4-MeS	147	4-Me	156	<del>3,4-(CH)<sub>2</sub></del>

3,4-(CH=CH-CH=CH)

## Page 40, Table 7

Table 7



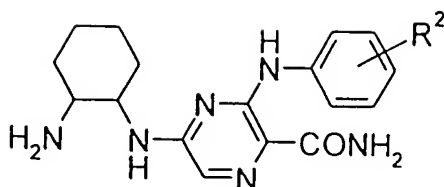
Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>
157	2-Br	166	2-HOCH <sub>2</sub>	175	2-MeS	184	4-Me
158	3-Br	167	3-HOCH <sub>2</sub>	176	3-MeS	185	2-Et
159	4-Br	168	4-HOCH <sub>2</sub>	177	4-MeS	186	3-Et
160	2-Cl	169	2-H <sub>2</sub> N	178	2-PhO	187	4-Et
161	3-Cl	170	3-H <sub>2</sub> N	179	3-PhO	188	3,5-MeO
162	4-Cl	171	4-H <sub>2</sub> N	180	4-PhO	189	3,5-Me
163	2-F	172	2-Ac	181	2-MeO	190	2,3-OCH <sub>2</sub> O
164	3-F	173	3-Ac	182	4-MeO	191	3,4-OCH <sub>2</sub> O
165	4-F	174	4-Ac	183	2-Me	192	<del>3,4-(CH)<sub>2</sub></del>

3,4-(CH=CH-CH=CH)



Page 42, Table 9

Table 9

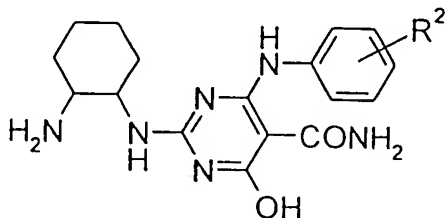


Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>
241	2-Br	250	2-H <sub>2</sub> N	259	2-PhO	268	2-CN
242	4-Br	251	3-H <sub>2</sub> N	260	4-PhO	269	3-CN
243	2-Cl	252	4-H <sub>2</sub> N	261	2-MeO	270	4-CN
244	4-Cl	253	2-Ac	262	4-MeO	271	3,5-Br
245	2-F	254	3-Ac	263	2-Et	272	3,5-Cl
246	4-F	255	4-Ac	264	4-Et	273	3,5-F
247	2-HOCH <sub>2</sub>	256	2-MeS	265	2-NO <sub>2</sub>	274	2,3-OCH <sub>2</sub> O
248	3-HOCH <sub>2</sub>	257	3-MeS	266	3-NO <sub>2</sub>	275	3,4-OCH <sub>2</sub> O
249	4-HOCH <sub>2</sub>	258	4-MeS	267	4-NO <sub>2</sub>	276	3,4-(CH) <sub>4</sub>

Page 42, Table 10

3,4-(CH=CH-CH=CH)

Table 10



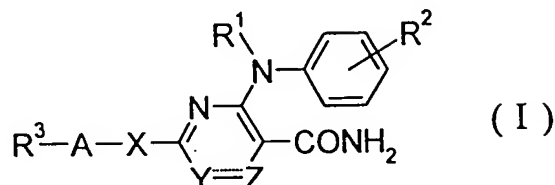
Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>	Cmpd	R <sup>2</sup>
277	2-F	286	2-H <sub>2</sub> N	295	2-PhO	304	2-Bu
278	3-F	287	3-H <sub>2</sub> N	296	3-PhO	305	3-Bu
279	4-F	288	4-H <sub>2</sub> N	297	4-PhO	306	4-Bu
280	2-Cl	289	2-Ac	298	2-MeO	307	3,5-Cl
281	3-Cl	290	3-Ac	299	3-MeO	308	3,5-MeO
282	4-Cl	291	4-Ac	300	4-MeO	309	3,5-Me
283	2-HOCH <sub>2</sub>	292	2-MeS	301	2-Et	310	2,3-OCH <sub>2</sub> O
284	3-HOCH <sub>2</sub>	293	3-MeS	302	3-Et	311	3,4-OCH <sub>2</sub> O
285	4-HOCH <sub>2</sub>	294	4-MeS	303	4-Et	312	3,4-(CH) <sub>4</sub>

3,4-(CH=CH-CH=CH)

**IN THE CLAIMS:**

The claims are amended as follows:

1. (Amended) A heterocyclecarboxamide derivative represented by the general formula (I) or a salt thereof.



wherein the symbols in the formula have the following meanings:

A: a lower alkylene which may have substituent(s), an arylene which may have substituent(s), a heteroarylene which may have substituent(s), or a cycloalkylene which may have substituent(s);

X: NR<sup>4</sup>, CONR<sup>4</sup>, NR<sup>4</sup>CO, O, or S;

a dotted line between Y and Z: presence (Y=Z) or absence (Y-Z) of a bond;

Y-Z: N(R<sup>5</sup>)-C(O), C(O)-N(R<sup>5</sup>), N(R<sup>5</sup>)-N(R<sup>5</sup>), or C(O)-C(O);

Y=Z: N=C(R<sup>6</sup>), C(R<sup>7</sup>)=N, N=N, or C(R<sup>7</sup>)=C(R<sup>7</sup>);

R<sup>1</sup>, R<sup>4</sup>: H, a lower alkyl, -CO-lower alkyl, or -SO<sub>2</sub>-lower alkyl;

R<sup>2</sup>: H, a lower alkyl, a halogen, a lower alkyl substituted by halogen(s), -O-lower alkyl, -S-lower alkyl, -O-aryl, -O-lower alkylene-aryl, -S-lower alkylene-aryl, nitro, or cyano, ~~or group~~ -OCH<sub>2</sub>O, or -(CH=CH-CH=CH)-;

R<sup>3</sup>: -CO<sub>2</sub>H, -CO<sub>2</sub>-lower alkyl, -lower alkylene-CO<sub>2</sub>H, -lower ~~alkylene~~ alkylene-CO<sub>2</sub>-lower alkyl, -CONHOH, -CONHO-lower alkyl, -lower alkylene-CONHOH, -lower alkylene-CONHO-lower alkyl, -NH<sub>2</sub>, -(NH<sub>2</sub> in a prodrug form), -lower alkylene-NH<sub>2</sub>, or -lower alkylene-(NH<sub>2</sub> in a prodrug form);

R<sup>5</sup>: the same or different, H or a lower alkyl group;

R<sup>6</sup>: a lower alkyl, -OH, -O-lower alkyl, -O-aryl which may have substituent(s), -O-lower alkylene-aryl which may have substituent(s), -NR<sup>1</sup>-aryl which may have substituent(s), -CO-lower alkyl, or -aryl group which may have substituent(s); and

R<sup>7</sup>: the same or different, H or the same group as R<sup>6</sup>.

FOOTNOTES